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MCAS EL TORO
SSIC #5090.3

DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132-5190

5090
Ser 06CC.GB/0355
April 9, 2002

Mr. Daniel Jung
City of Irvine
Director of Strategic Programs
One Civic Center Plaza
Irvine, CA 92623-9575

SUBJECT: RESPONSE TO CITY OF IRVINE COMMENTS ON THE PRELIMINARY ASSESSMENT FOR BUILDING 307, FORMER MARINE CORPS AIR STATION EL TORO

Dear Mr. Jung:

Thank you for providing comments on the Technical Memorandum regarding the Preliminary Assessment at Building 307. Many of your concerns and comments have enabled us to incorporate more lucid accounts and descriptions in our documents.

Attached are our responses to the issues/concerns raised in your letters dated November 7 and 26, 2001. The technical memorandum was reviewed by the three regulatory agencies (U.S. EPA, California Department of Toxic Substances Control, and the California Regional Water Quality Control Board) that oversee the Installation Restoration Program at El Toro. Each agency concurred with the reported conclusions. They support the Navy's position that activities associated with past dry cleaning operations at Building 307, or along the sewer line segment from Building 307 to the former sewage disposal plant, have not been the source of significant releases. Based on these findings, no further investigation of this area is required.

Should you have any questions, or need additional information, please contact either Mr. Gordon Brown at (619) 532-0791 or myself at (619) 532-0765.

Sincerely,

for James R Sheets
DEAN GOULD
Base Realignment and Closure
Environmental Coordinator
By direction of the Commander

Enclosure: 1. Response to the City of Irvine Comments, MCAS, El Toro

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Copy to: (w/encl)
Ms. Nicole Moutoux, U.S. EPA
Ms. Triss Chesney, Cal EPA, DOTSC
Ms. Patricia Hannon, Cal RWQCB, Santa Ana Region
Mr. Jerry Werner, RAB Community Co-Chair
Ms. Marcia Rudolph, RAB Subcommittee Chair
Mr. Wayne Lee, AC/S Env. & Safety, COMCABWEST
Ms. Polin Modanlou, Local Reuse Authority

Document Title:

(1) Draft Technical Memorandum, Preliminary Assessment, Building 307, Marine Corps Air Station, El Toro, California

Reviewer: Daniel Jung- City of Irvine, Director of Strategic Programs. December 7 and 26, 2001

Comment No.	Comment	Response
1.	a) First, the report does not give an adequate background regarding dry cleaning activities and, as such, may mischaracterize some aspects of the findings. b) Second, there is inadequate discussion of likely contamination patterns that might be found were there to be a leak in the piping below Building 307 and the sewer line between Building 307 and the former sewage treatment plant. c) Third, the conclusions should be modified to reflect the consideration of CFC-113 as a primary constituent of concern raising the possibility that further investigation of the sewer line between Building 307 and the former sewage treatment plant may be appropriate. d) Moreover, any conclusions about whether or not leaks occurred from this sewer line or from any other sewer lines elsewhere on the base are groundless.	a) & b) Prior to conducting the preliminary assessment, the work plan was submitted to, reviewed, and approved by the regulatory agencies. Historically, dry cleaning operations consisted of washers and dryers. Solvent spillage on to the floor and into floor drains could have resulted. As part of the work plan preparation, a review of record drawings and an inspection of the building were conducted to verify the type and placement of dry cleaning equipment, the associated plumbing, and the location of floor and trench drains. By performing this review, the Navy was able to discern, with some certainty, potential locations where dry cleaning residuals or waste could have been discharged. A 20-foot by 20-foot sampling grid was established and soil gas sampling points were selected close to the historical locations of dry cleaning equipment and trench drains within the building. Likewise, for the evaluation of the sanitary sewer segment, soil gas sampling points were placed as close as possible to the sewer with the first soil gas sample collected within 5 feet of the bottom of the sewer. By using this worst-case scenario-sampling scheme, locations that had the highest likelihood of a release were evaluated. c) The Navy and BCT jointly agree that the sampling approach used adequately characterized any releases that may have occurred as a result of dry cleaning activities. In addition, with regard to the constituents of concern, EPA Method 8021B and EPA Method TO14 (modified) were used to analyze for organic compounds. Although CFC-113 was not initially identified as a constituent of potential concern, both EPA sampling methods would have detected and quantified CFC-113. d) The Navy's report is specific to and based on the sampling and resulting data for the segment of sewer line that would have had the highest potential to be contaminated from historical activities, (i.e. the sewer line segment from Building 307 to the former sewage treatment plant) according to the conclusions reached and stated in the Irvine Solvent Study. The sampling conducted adequately supports the conclusions for this sewer line segment. If, for example, there had been solvents that had leaked from the sewer, sampling activities would have detected residuals. Thus, results from this assessment provide data used in the Navy's response to the Irvine Solvent Study

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2	The draft technical memorandum notes that laundry and dry cleaning activities occurred during the period from approximately 1944 to 1977, which was the time of potential perchloroethylene (PCE) and carbon tetrachloride use. The draft technical memorandum fails to note that CFC-113 (also known by DuPont's trade name as Freon-113) was also in common use during the period for dry cleaning activities. During the immediate pre-war period, carbon tetrachloride began to replace Stoddard's solvent (a hydrocarbon) due to the flammability of the latter. Carbon tetrachloride itself was phased out beginning in the late 1950s and early 1960s due to its toxicity. PCE, perceived to be less toxic, grew in use to become the primary dry cleaning solvent. However, during this period CFC-113 was used for dry cleaning as an alternative to PCE for some synthetic fibers, garments with plastic trim items, and leather and suede clothing, because the PCE was considered too harsh for these materials. Thus, in addition to the possible contamination due to PCE and carbon tetrachloride, there is also the possibility of CFC-113 contamination and CFC-113 should be considered a primary chemical of potential concern in the study.	In accordance with the BCT approved work plan, soil gas samples were analyzed for volatile organic compounds in the field using a mobile laboratory. EPA method 8021B and at a fixed based laboratory using EPA method TO14 (modified) were used. Although CFC-113 was not identified as a constituent of potential concern, both methods detected and quantified CFC-113. The concentrations of CFC 113 in soil gas ranged from not detected (ND) to 14J µg/L. Therefore, while the preliminary assessment did not specifically mention CFC 113 as a constituent of concern, the detection and quantification of CFCs, including CFC 113, was included in the report. It should be noted that making CFC-113 a constituent of potential concern would not change any of the assessment's conclusions. In summary, the assessment evaluated the presence of many VOCs, such as PCE, TCE, carbon tetrachloride, and daughter by-products that would have resulted with degradation of dry cleaning chemicals over time. The concentrations of detected compounds were low, intermittent, isolated, and not indicative of a significant release. Therefore, the conclusions from the assessment are still valid.

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3	Sampling of soil gas and soil for PCE (and TCE, the major contaminant of groundwater and soil at MCAS El Toro) is appropriate by virtue of the high likelihood that any leak to the soil via the sewer lines will result in substantial adsorption and a very slow degradation rate and/or release. However, such an approach makes less sense for either CFC-113 or carbon tetrachloride. Both are highly volatile, unlikely to adsorb onto soil particles, and more likely to move to groundwater if released to soil. Thus, soil gas and soils sampling for materials released in the 1940s and 1950s in the case of carbon tetrachloride, and the 1950s through the 1970s in the case of CFC-113, is not likely to show much evidence of a release. This is supported by the data presented in the draft technical memorandum. CFC-113 was identified in two locations: in soil gas at 15' bgs under Building 307 (sample location 7) and along the sewer line at 15' and 66' bgs (location 23). These sample results may indicate several leaks in the piping and sewer. At location 7, the CFC-113 may have leaked and remain trapped in soil gas with the building floor serving as a barrier to volatilization to air. At location 23, the samples are consistent with a leak where the mass has partially volatilized to air, with the remaining quantity moving towards groundwater. We also note the small number of groundwater samples taken downgradient from the location 23 where CFC-113 was identified in shallow and deep samples: HP02 also appears inappropriately located to detect CFC-113 associated with location 7.	The assessment included collecting groundwater samples (hydropunch) at a location that had elevated soil gas concentrations and at locations up and downgradient of Building 307. The samples collected were all analyzed for VOCs, including CFC-113. (These results will be added to the Final Technical Memorandum). CFC-113 concentrations ranged from ND to 1µg/L. Hydropunch location HP01 located upgradient of Building 307 was sampled to establish "baseline" VOC concentrations in groundwater. Due to height restrictions, hydropunch sampling at location 7 could not be collected. However, sampling at HP02 (near location 23) was conducted. Consistent with your comment, if there had been significant releases of CFCs and Carbon Tetrachloride, residuals would have been detected in the groundwater at this location. However, the results do not show a significant impact to groundwater. CFC-113 was not detected in the sample collected from hydropunch location HP03, which is located downgradient of the building and location 23. CFC-113 was not detected in the deepest soil gas sample (Location 23 at 90 feet). Therefore, it is the Navy's opinion that if a significant release had occurred, it would have manifested itself in the deeper soil gas. In addition, the concentrations of VOCs in groundwater samples collected from wells in the vicinity of Building 307 were relatively low and not indicative of release from Building 307.

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4	The technical memorandum concludes that the sampling results show that there has not been a significant release of VOCs to the environment due to operations conducted within Building 307 or along the sewer line associated with the building. The conclusions note that the (PCE, TCE, DCE, and carbon tetrachloride) were all less than 1 µg/l for shallow depths and less than 10 µg/l for deeper samples. However, we believe that CFC-113 should be considered a primary constituent of concern for this analysis. Because the results for this substance are above 1 µg/l at shallow depths and above 10 µg/l for deeper samples, the conclusion may not be valid. Indeed the results may be consistent with a leak of CFC-113. The smaller number of samples downgradient from Building 307 and the sewer line may be inadequate to draw any conclusions about possible groundwater contamination that may have resulted from a leak. We urge you to consider whether or not the quantities of CFC-113 identified in the soil reach the level of significance appropriate for further action at this location. We also urge caution on drawing any conclusion about the integrity of the piping and sewer system associated with Building 307 and any other location at MCAS El Toro based on these results.	The conclusions will be revised to mention CFCs. Although there were detections of CFCs in soil gas at depth (at location 23), there were no detections in the soil gas sample collected immediately above groundwater. It is the BCT's opinion that sampling conducted did not show a significant release to the vadose zone, and given the locations with low detections, impact to groundwater was very low. Results from over 100 samples (soil gas/soil/groundwater) were used to verify that there had not been a significant release. The sampling locations that were selected represent the areas that have the highest potential to be affected by historical releases. Regulatory agencies who reviewed the data and the report concurred with the recommendations and conclusions.

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5.	Briefly, in our previous comments, we argued that CFC-113 (also known by DuPont's trade name as Freon-113) should be considered a primary constituent of concern due to its use as a dry cleaning solvent while the laundry facility was in operation. We noted that a location 23, the samples are consistent with a CFC-113 leak where the mass has partially volatilized to air, with the remaining quantity moving towards groundwater. And we urged that the results of the sampling not be considered conclusive evidence for the integrity of the piping and sewer system associated with Building 307 or any other location at MCAS El Toro based on these results. We urge you to consider the results of the Round 13 of the Groundwater Monitoring program. Results presented in the "Final Groundwater Monitoring Report, February 2001 Monitoring Round 13" (October 22, 2001) support our previous comments. In particular, please review the sampling results for monitoring well 12DBMW-48A located on Site 12, the former wastewater treatment facility. At the location, sampling identified a concentration of 210 µg/l in groundwater. Other wells where CFC-113 was detected cross gradient (to the east) to that site indicating that potentially the contamination at Site 12 is from a different source. This finding is consistent with a CFC-113 leak from the piping and sewer system and provides an explanation for the sampling results obtained during the investigation of Building 307 We urge you to include the results of Groundwater Monitoring Round 13, as well as any subsequent groundwater monitoring results, in the analysis for the Draft Technical Memorandum and again urge you to consider that these findings are indicative of the piping and sewer system as a source for VOCs.	See our response to Comment No. 4. The Navy has reviewed the groundwater monitoring results from 12DBMW_48A. The results show that CFC-113 was detected at a concentration of 210 µg/L. Please note the maximum contaminant level (MCL) for CFC-113 is 1200 µg/L. The well is located over 1000 feet cross gradient from Building 307. A review of the CFC-113 monitoring data from 12_UGMW 29 and sampling performed as part of the preliminary assessment indicates that activities at Building 307 were not the source of these elevated concentrations. The conclusions presented in the Building 307 report are still valid.